

Claims:

1. A method for electrically charging a probe, cannula, pin tool or other similar component or plurality of such components made of any material of a fluid dispensing device used to pipet small volumes of fluids by plasma technology comprising the following steps:

placing such probe, cannula, pin tool or other similar component or plurality of such components to be charged in a space that plasma is generated by a plasma generating device;

applying electromagnetic energy to the plasma generating device, thereby molecularly disassociating the gas, thus creating charged ions, free electrons, and free radicals, and charging the surface by the charged ions and free radicals attaching to the probe, cannula, pin tool or other similar component or plurality of such components,

removing the charged probe, cannula, pin tool or other similar component or plurality of such components from the area of plasma generation, whereby the charged probe, cannula, pin tool or other similar component or plurality of such components can pipette compounds in small volumes.

2. A method for electrically charging a probe, cannula, pin tool or other similar component or plurality of such components made of any material of a fluid dispensing device used to pipet small volumes of fluids by plasma technology comprising the following steps:

placing such probe, cannula, pin tool or other similar component or plurality

of such components to be charged within in a space that plasma is generated by a plasma generating device;

using the plasma generating device to introduce a gas mixture of oxygen and a carrier gas into the plasma, and

applying electromagnetic energy to the gas mixture, thereby causing a breakdown of the Oxygen (O_2) molecules into O ions, free electrons, and free radicals; (i.e., the plasma), thereby causing the ions and free radicals to attack and attach to the probe, cannula, pin tool or other similar component or plurality of such components, thereby imparting a charge to the surface

removing the charged probe, cannula, pin tool or other similar component or plurality of such components from the area of plasma generation, whereby the charged probe, cannula, pin tool or other similar component or plurality of such components can pipette compounds in small volumes.

3. The method of claim 2 wherein the carrier gas is argon.

4. A method for electrically charging a probe, cannula, pin tool or other similar component or plurality of such components made of any material of a fluid dispensing device and coated with one or more additional materials or treatments used to pipet small volumes of fluids by plasma technology comprising the following steps:

placing such coated probe, cannula, pin tool or other similar component or plurality of such components with a physical coating or permanent surface treatment

to be charged in a space that plasma is generated by a plasma generating device,

applying electromagnetic energy to the plasma generating device, thereby molecularly disassociating the gas, thus creating charged ions, free electrons, and free radicals, and charging the surface by the charged ions and free radicals attaching to the probe, cannula, pin tool or other similar component or plurality of such components,

removing the charged probe, cannula, pin tool or other similar component or plurality of such components from the area of plasma generation, whereby the charged probe, cannula, pin tool or other similar component or plurality of such components can pipette compounds in small volumes.

5. The methods of claims 1 for electrically charging a probe, cannula, pin tool or other similar component or plurality of such components made of any material of a fluid dispensing device used to pipet small volumes of fluids by plasma technology comprising the following steps:

placing such probe, cannula, pin tool or other similar component or plurality of such components to be charged in a space that plasma is generated by a plasma generating device,

applying electromagnetic energy to the plasma generating device, thereby molecularly disassociating the gas, thus creating charged ions, free electrons, and free radicals, and charging the probe by the charged ions and free radicals attaching to the probe, cannula, pin tool or other similar component or plurality of such components,

using the fluid dispensing device to create a backpressure or vacuum within the probe, cannula or other similar component or plurality of such components and pulling the plasma into the interior space of the probe, cannula or other similar component or plurality of such components

using the fluid handling device to create a positive pressure within the probe, cannula or other similar component or plurality of such components to expel the plasma from the interior space of the probe, cannula or other similar component or plurality of such components.

repeating the prior two steps, as desired.

removing the charged component from the area of plasma generation, whereby the charged probe, cannula or other similar component or plurality of such components can pipette compounds in small volumes.

6. A method for electrically charging the surfaces of a fluid containing device, such as, but not limited to, a tube or microplate made of any material, with one or a plurality of containment wells or fluid processing surface, made of any material including but not limited to plastic, composite, glass or silicon, by plasma technology for use in manipulating small volumes of fluids comprising the following steps:

placing such container, having a tube like structure or wells for containing such fluid or a surface to place drops of fluids into a position so as to be exposed appropriately to the plasma,

applying electromagnetic energy to the plasma generating device, thereby molecularly disassociating the gas, thus creating charged ions, free electrons, and

free radicals, and charging the probe by the charged ions and free radicals attaching to the surfaces to be treated;

moving or leaving in place the containing device or surface for the dispensing of small volumes of fluid, or removing or leaving in place the containing device or surface without further processing. ,

7. The method in claim 6 using a gas mixture of oxygen and a carrier gas.
8. The method in claim 6 using with the carrier gas argon.
9. The method in claim 6 with the plasma charge being applied on a one or more coating materials or treatments on the containment device or surface.